Tárgytematika / Course Description

Measuring Theories and Techniques

GKNM_FKTA013

Tárgyfelelős neve / Teacher's name: dr. Berta Miklós
Félév / Semester: 2022/23/1
Beszámolási forma / Assesment: Vizsga
Tárgy heti óraszáma / Teaching hours(week): 2/2/0
Tárgy féléves óraszáma / Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of subject is teaching basics of measurement theory and techniques, to build solid basics

for measured experimental data evaluation. Important part is application of theoretical basics using industry standard software package for data evaluation, MATLAB.

TANTÁRGY TARTALMA / DESCRIPTION

Main sections:

- summary of measurement techniques
- statistical basics of data treatment and evaluation
- important statistical distribution functions
- least square method and linear regression
- time series in time and frequency domain
- correlation and spectral analysis

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Obligatory literature:

- Miklós Berta: Measurement theory and techniques, lecture notes, 2021, Sséchenyi University

Suggested literature:

- S. V. Gupta: Measurement Uncertainties, Springer 2012.
- S. G. Rabinovich: Measurement Errors and Uncertainties (Theory and Practice), Springer 2005
- J. R. Taylor: An Introduction to Error Analysis, University Science Books Sausalito, California
- A. Knight, Basics of MATLAB and Beyond, CRC Press LLC, 2000

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL